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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,668	08/24/2001	Yasushige Nakamura	011071	1050

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EXAMINER

DOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,668

Applicant(s)

NAKAMURA et al

Examiner

J. DOTE

Group Art Unit

1756

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 3/28/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-17 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-17 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____ ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

Office Action Summary

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after the final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Mar. 28, 2003, has been entered.

2. The examiner acknowledges the amendments to claims 1, 7, and 11 filed in Paper No. 10 on Mar. 28, 2003. Claims 1-17 are pending.

The examiner notes that applicants has not directed the office to cancel claims 15-17. See Paper No. 10, page 2, which merely states "[p]lease amend the claims as follows:".

3. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g., Scotch™ mending tape [sic: SCOTCH mending tape] at page 29, line 25, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicants' amendment filed in Paper No. 10 did not overcome the rejection. The amendment to the specification in Paper No. 10 only capitalized the trademark HANSA. As noted in the above objection, applicants' amendment did not capitalize all the trademarks disclosed in the instant specification. Accordingly, the objection stands.

4. Applicants are advised that should claims 2, 8, and 12 be found allowable, claims 15-17 will be objected to under 37 CFR 1.75 as being substantial duplicates thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(1) Claims 1, 7, and 11, and claims dependent thereon, recite a polyester resin comprising a first crosslinked polyester resin having a softening point Tsp of not lower than 120°C and lower than 170°C, and a second "non-crosslinked polyester resin" having a Tsp of not lower than 80°C and lower than 110°C.

The originally filed specification does not provide an adequate written description of the generic second "non-crosslinked polyester resin" recited in the instant claims. Throughout the originally filed specification, the specification only discloses a polyester resin comprising a first non-linear polyester and a second non-linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C. See the originally filed specification, page 4, line 36, to page 5, line 1; page 8, lines 11-16 and 24-31; and page 10, lines 8-10. The second "non-crosslinked polyester resin" recited in the instant claims is

broader than the disclosed "second non-linear polyesters," because the former includes "linear polyester" resins. The term "linear polymer" is usually defined as polymers that are not branched, cross-linked or of a network structure. See Polymer Technology Dictionary, page 225. In light of definition of "linear polymer," the term "non-linear polymer" thus refers to polymers that are branched, cross-linked or of a network structure. The originally filed specification does not disclose that the second non-linear polyester is a non-crosslinked polyester resin as recited in the instant claims. Furthermore, the two particular "non-crosslinked" polyester resins 2-2 and 2-3 reported in Table 1, page 24 of the specification, do not provide an adequate written description of the broader second non-crosslinked polyester resin recited in the instant claims. The particular polyester resins 2-2 and 2-3 have a particular chemical composition. Both resins are obtained by reacting two particular alcohol components, polyoxypropylene (2.2)-2,2-bis(4-hydroxy-phenyl)propane and polyoxyethylene (2.2)-2,2-bis(4-hydroxy-phenyl)propane in a 1:1 molar ratio, with the particular acid component terephthalic acid. Resins 2-2 and 2-3 also have respective Tsp's of 80°C and 100°C, and respective acid values of 7.5 and 10.6. The broader generic non-crosslinked polyester resin having a Tsp of not lower than 80°C and lower than 110°C recited in the instant claims is broader than the two disclosed

narrow species, and encompasses polyester resins outside the scope of resins 2-2 and 2-3.

(2) Claims 15-17 recite a polyester resin comprising a first non-linear polyester resin having a softening point Tsp of not lower than 120°C and lower than 170°C, and a second linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C. The claims further recite that the linear polyester resin has an acid value from 5 to 20.

The originally filed specification does not provide an adequate written description of the generic second linear polyester resin recited in the instant claims. For the reasons discussed in item (1) above, the originally filed specification only discloses a polyester resin comprising said first non-linear polyester and a second non-linear polyester resin having a Tsp of not lower than 80°C and lower than 110°C. There is no disclosure of a polyester resin comprising the second linear polyester resin broadly recited in the instant claims.

Applicants' arguments filed in Paper No. 10 with respect to item (1) above have been fully considered but they are not persuasive.

Applicants in Paper No. 10, page 5, state that the they consistently refer to the first polyester resin in the specification "as 'crosslinked,' whereas the second resin is not so called." Applicants cite page 11, lines 16-22, of the

specification, which describes how to crosslink the first polyester resin. Applicants further submit that Table 1 of the instant specification shows that the first resin (1-1 to 1-5) contains a crosslinking component, whereas the second resin (2-1 to 2-5) does not.

Applicants' arguments are not persuasive. As discussed in the rejection in item (1) above, the originally filed specification only refers to the second polyester as a "non-linear" polyester resin having a Tsp of not lower than 80°C and lower than 110°C. There is no disclosure of a second non-crosslinked polyester resin as broadly recited in instant claims 1, 7 and 11. Nor is there any disclosure that the disclosed second non-linear polyester is not cross-linked. Contrary to applicants, the second resins 2-1, 2-4, and 2-5 are outside the scope of instant claims 1, 7, and 11, because they have Tsp's of 70, 110, and 120°C, respectively, which are outside the range of "not lower than 80°C and lower than 110°C" recited in those claims. The two narrow exemplified species of non-crosslinked polyester resins, 2-2 and 2-3, do not provide an adequate written description of said broad second non-crosslinked polyester resin recited in instant claims 1, 7, and 11. Accordingly, the rejection stands.

As discussed in paragraph 2, supra, applicants did not cancel claims 15-17. Thus, the rejection of those claims stands.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1, 3/1, 4/3/1, 5/1, and 6/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,232,028 B1 (Kushino'029) combined with US 6,361,914 B1 (Semura) and Japanese Patent 2000-075544 (JP'544). See the DERWENT machine-assisted translation of JP'544 for cites.

Kushino'029 discloses a flash fixing electrophotographic color toner made in a particular method. The toner comprises a colorant, an infrared absorber, and a binder resin. Kushino'029's method comprises the steps of blending a master batch comprising the infrared absorber with the other toner components to form a toner composition, melting and kneading the toner composition, and then pulverizing the kneaded composition to form toner particles. See, for example, example 1 at cols. 15 and 16. The infrared absorber has a maximum absorption wavelength preferably in the range of 750 to 1100 nm, more preferably in the range of 800 to 1100 nm. Col. 3, lines 38-40. The infrared absorber can be a phthalocyanine compound. Col. 4, line 28, to col. 7, line 59. Kushino'029 discloses that said toner can be used in an electrophotographic printing process. Col. 1, lines 14-15, and col. 19, lines 42-48. Kushino'029 discloses that a xenon flash lamp is used for fixing the flash

fixing electrophotographic toner. The xenon flash lamp is preferably operated with "an electric input energy per unit" in the range of 1.6 to 3 J/cm². Col. 15, lines 29-33.

Kushino'029 discloses that his toner "has a high capacity for absorption of infrared ray, exhibiting a highly satisfactory flash fixing property, and providing economically advantageous." Col. 2, lines 35-38. Kushino'029's toner provides toner images without fog and voids. See Table 1 at col. 20.

Kushino'029 does not disclose that the toner binder resin comprises a polyester resin as recited in the instant claims. However, Kushino'029 discloses that the binder resin "does not need to impose any particular restriction," and that the resin can be a polyester resin. Col. 13, lines 8-9, 12, and 15.

Semura discloses a toner polyester resin for use in toners that are capable of being fixed with a non-contact fixing method, such as flash fixing. Col. 1, lines 18-21 and 62. The toner polyester binder resin comprises a first crosslinked (i.e., non-linear) polyester resin having a softening point Tsp within the range of 120 to 160°C and a second non-crosslinked polyester having a Tsp within the range of 80 to 120°C. See col. 3, lines 38-44, and for example, examples 2, 4, and 6 in Table 3 at col. 7; resins B and C in Table 1 at col. 5; and resin b in Table 2 at col. 5. Non-crosslinked polyester resins B and C have respective Tsp's of 102.5°C and 94.2°C. Crosslinked resin b has

a Tsp of 149.8°C. In examples 2, 4, and 6, the first polyester resin and second polyester resin are present in weight ratios of 50:50 or 80:20 of the first to second resin, which are both within the range of 20:80 to 80:20 recited in instant claim 1. Although not exemplified, Semura teaches the first crosslinked polyester can also be exemplified resin c, which has a Tsp of 144.5°C. See resin c in Table 2, and examples 9 and 10 in Table 3. The Tsp's of the exemplified non-crosslinked polyester resins B and C and the crosslinked resins b and c are within the ranges recited in instant claim 1. Both first and second polyester resins are obtained by reacting an alcohol component "consisting essentially of" an alkylene oxide adduct of bisphenol A that is within the limitation of formula (I) in instant claim 5. See resins B and C in Table 1 and resins b and c in Table 2. Semura discloses that its toner polyester binder resin effectively prevents the generation of voids in the non-contact fixing process. According to Semura, toners comprising its polyester binder resin have excellent environmental resistance, storage ability, and fixing ability. Col. 1, lines 42-47, and Table 3, examples 2, 4, and 6.

Semura does not disclose that its crosslinked polyester resin comprises a chloroform-insoluble content of 1 to 25 parts by weight as recited in instant claim 1.

JP'544 teaches crosslinked polyester binder resins having a softening point Tsp of 130-145°C. JP'544 discloses that when said crosslinked polyester resins are used as binder resins in flash-fixing toners, the polyester resins should have a chloroform-insoluble content of from 0.5 to 10 wt%. DERWENT translation, paragraphs 0012 and 0014. JP'544 discloses that said crosslinked polyester comprising a chloroform-insolubles content of 0.5 to 10 wt% has sufficient melting characteristics for flash-fixing and good adhesive properties. DERWENT translation, paragraph 0017. For example, JP'544 exemplifies crosslinked polyester resins comprising chloroform-insoluble contents of 3.5, 5.7, 6.4, or 7.5 wt%. See resins PEs-12, -13, -23, and -24 in Table 1. The upper range chloroform-insoluble content of 10 wt% and the chloroform-insoluble content of the resins PEs-12, -13, -23, and -24 are within the range of 1 to 25 wt% recited in instant claim 1. When the chloroform-insoluble content exceeds 10 wt%, the melting characteristics and fixing property of the toner are reduced. DERWENT translation, paragraph 0020, and examples 14, 15, and 25 in Table 3. (Examples 14, 15, and 25 comprise crosslinked polyester resins comprising chloroform-insoluble contents of 10.9, 15.6, and 15.2 wt%, respectively.)

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Semura and JP'544,

to make a crosslinked polyester resin obtained from the alcohol and acid components in the amounts taught by Semura, such that the resulting crosslinked polyester resin has a softening point of 130 to 145°C and a chloroform-insoluble content of 10 wt% as taught by JP'544, and to use said crosslinked polyester resin in combination with either Semura's non-crosslinked polyester resins B or C, as the toner binder resin in the toner disclosed by Kushino'029. That person would have had a reasonable expectation of successfully obtaining a flash-fixing electrophotographic toner having the benefits disclosed by Semura and insured good fixing ability to image receiving material when flash-fixed to said image material as disclosed by JP'544.

9. Claims 7, 9/7, 10/9/7, 11, 13/11, and 14/13/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushino'029 combined with Semura and JP'544 as applied to claims 1, 3/1, 4/3/1, 5/1, and 6/1, above, further combined with Diamond, Handbook of Imaging Materials, pp. 160-163.

The combined teachings of Kushino'029, Semura, and JP'544 render obvious a flash-fixing electrophotographic toner as described in paragraph 8 above, which is incorporated herein by reference.

As discussed in paragraph 8, supra, Kushino'029 discloses that the flash fixing toner can be used in an electrophotographic

printing process, and that toner fixing is accomplished with a xenon flash lamp having an "electric input energy per area" in the range of 1.6 to 3 J/cm², which is within the range of 1.0 to 6.0 J/cm² recited in instant claims 7 and 11. Kushino'029 discloses that the flash fixing toner can be used in copying devices of the Carlson system. Col. 15, line 41.

Kushino'029 does not explicitly recite the imaging forming steps recited in instant claim 7. Nor does Kushino'029 explicitly recite the components in the copying apparatus recited in instant claim 11. However, the image forming steps in an electrophotographic method and the components in an electrophotographic copying apparatus are well-known in the art. Diamond discloses that an electrophotographic image copier comprises (1) a photoreceptor, (2) a charging device that charges the photoreceptor, (2) an image exposure system that irradiates the charged photoreceptor to form a latent electrostatic image, (3) a developing device that develops the latent image with a toner to form a visible toner image on the photoreceptor, (4) a transfer device to transfer the toner image from the photoreceptor to paper, (5) a fusing (i.e., fixing) device that fuses (fixes) the toner image to the paper by exposing the toner image to radiant heat from a lamp, or by contact with a heater roller, etc. Diamond, pages 160-163, and Figs. 4.1 and 4.2.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kushino'029 and Diamond, to use the flash fixing electrophotographic toner rendered obvious by the combined teachings of Kushino'029, Semura, and JP'544 in the electrophotographic imaging process and apparatus comprising the steps and components recited in instant claims 7 and 11, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic imaging process and copying apparatus that provide color toner images adequately fixed to image receiving material without voids and fog as taught by Kushino'029, Semura, and JP'544, under any environmental condition as disclosed by Semura.

10. Applicants' arguments filed in Paper No. 10 with respect to the rejections set forth in paragraphs 8 and 9 above have been fully considered but they are not persuasive.

Applicants asserted that "the claimed invention, as herein amended, patentability distinguishes over the cited art and defines patentable subject matter."

However, applicants' arguments fail to comply with 37 CFR 1.111(b), because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicants' do not

indicate how the amendments to claims 1, 7, and 11 distinguish the claimed invention from the cited prior art. As discussed in paragraphs 8 and 9, the combined teachings of the cited references render obvious the instantly recited subject matter recited in the instant claims. Accordingly, the rejections stand.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Palestine Jenkins, whose telephone number is (703) 308-3521.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JLD
April 8, 2003


JANIS L. DOTE
PRIMARY EXAMINER
GROUP 1500
1700